

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- REVISED

PERMITTEE

CTI Industries Corporation
Attn: Thomas Cohen
22160 North Pepper Road
Barrington, Illinois 60010

Application No.: 95090158
Applicant's Designation: PRINTING
Subject: Commercial Printing
Date Issued:
Location: 22160 North Pepper Road, Barrington

I.D. No.: 097803AAB
Date Received: May 23, 2005
Expiration Date:

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of two flexographic presses, plate making operation and two laminators/coaters, pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued:
 - i. To limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for volatile organic material (VOM), 10 tons/year for any single HAP, and 25 tons/year for combination of HAPs). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
 - ii. To limit the emissions of volatile organic material from the source to less than 25 tons/year. As a result, the source is excluded from the requirements of 35 Ill. Adm. Code Part 205, Emission Reduction Market System. The maximum emissions of this source, as limited by the conditions of this permit are described in Attachment A.
 - b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
 - c. This permit supersedes all operating permits issued for this location.
- 2a.
 - i. Emissions of volatile organic material (VOM) and operation of the 2 flexographic presses, plate making operation and clean-up shall not exceed the following limits: 2.60 tons/month and 21.10 tons/year.

- ii. The VOM and HAP emissions shall be determined from the following equation on a weekly basis:

$$E = \left[\sum (M_i \times C_i) - W \times C_w \right] / 2,000$$

Where

E = VOM/HAP emissions (tons);

M_i = Raw material usage (gallons/month);

C_i = VOM/HAP content of the raw material (lb/gallon);

W = certified amount of waste shipped-off (gallons/month);

C_w = certified VOM/HAP content of the waste (lb/gallon).

Value of C_w for the reporting period shall be used from the most recent waste shipment. Upon receiving updated C_w for the reporting period emissions shall be recalculated.

- iii. These limits define the potential emissions of VOM and are based on maximum material usage, maximum VOM content, and 50 percent retention of the clean up solutions in rags that are sent off site. Compliance with annual limits shall be determined from a running total of 12 months of data.
- b. Emissions and operation of natural gas combustion units shall not exceed the following limits:

| Process | Natural Gas Usage | | Pollutant | Emission | Emissions | |
|---------------------------|-------------------|------------|-----------------|----------------------|-----------|--------|
| | (mmscf/Mo) | (mmscf/Yr) | | Factor (Lb/mmscf) | (T/Mo) | (T/Yr) |
| Natural Gas Combustion | 4 | 40 | NO _x | 100 | 0.20 | 2.00 |
| | | | CO | 84 | 0.17 | 1.68 |
| | | | PM | 7.6 | 0.02 | 0.15 |
| | | | VOM | 5.5 | 0.01 | 0.11 |

These limits are based on standard AP-42 emission factors and the information provided in the permit application. Compliance with annual limits shall be determined from a running total of 12 months of data.

3. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program Permit (CAAPP), and Section 112(G) of the Clean Air Act.

4. This permit is issued based on negligible emissions of particulate matter (PM) from the two laminators/coaters. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year per unit.
5. This permit is issued based on the two laminators/coater using materials that do not contain any volatile organic material.
6. The Permittee must comply with the following emission limitations and control requirements for all flexographic printing presses, pursuant to 35 Ill. Adm. Code 218.401(b):
 - a. The weighted average VOM content of the coating and ink (minus water and any compounds which are specifically exempted from the definition of VOM) shall not exceed 40.0 percent, by volume. The following equation shall be used to determine if the weighted average VOM content of all coatings and inks as applied each day on the subject printing line exceeds the limitation specified in subsection (a)(1) of this section.

$$VOM_{(i) (A)} = \frac{\sum_{i=1}^n C_i L_i (V_{si} + V_{VOMi})}{\sum_{i=1}^n L_i (V_{si} + V_{VOMi})}$$

Where:

- $VOM_{(i) (A)}$ = The weighted average VOM content in units of percent VOM by volume of all coatings and inks (minus water and any compounds which are specifically exempted from the definition of VOM) used each day
- i = Subscript denoting a specific coating or ink as applied
- n = The number of different coatings and/or inks as applied each day on a printing line
- C_i = The VOM content in units of percent VOM by volume of each coating or ink as applied (minus water and any compounds which are specifically exempted from the definition of VOM)
- L_i = The liquid volume of each coating or ink as applied in units of 1 (gal)
- V_{si} = The volume fraction of solids in each coating or ink as applied
- V_{VOMi} = The volume fraction of VOM in each coating or ink as applied

7. The Permittee shall collect and record the following information for each flexographic printing line, pursuant to 35 Ill. Adm. Code 218.404:
 - a. Daily records of the name and identification of each ink, coating, and any other clean-up solvent as applied on each printing line;
 - b. Daily records of the VOM content of each ink, coating, and any other cleanup solvent as applied on each printing line;
 - c. Daily-weight average VOM content of all inks and coatings as applied on each printing line;
 - d. Any record showing violation shall be reported by sending a copy of such record to the Illinois EPA within 30 days following the occurrence of the violation; and
 - e. If changing its method of demonstrating compliance with the applicable VOM content limitations in 35 Ill. Adm. Code 218.401, or changing the method of demonstrating compliance with the VOM content limitations for fountain solutions pursuant to 35 Ill. Adm. Code 218.401. Certify compliance for such new method(s) in accordance with 35 Ill. Adm. Code 218.404(d) within 30 days after making such change, and perform all tests and calculations necessary to demonstrate that such printing line(s) will be in compliance with the applicable requirements of 35 Ill. Adm. Code 218.401.
8. The Permittee shall maintain monthly records of the following items:
 - a. Amount of each ink, coating, wash-up solvent, and clean-up solvent used in the laminator/coater, plate making operation, and printing lines (lb or gal/month and gal or tons/year);
 - b. VOM content of each ink, coating, wash-up solvent, and clean-up solvent used in the laminator/coater, plate making operation, and printing lines (percent weight of VOM or lb VOM/gal);
 - c. The amount of VOM contained in each waste shipment (lb/month); and
 - d. VOM emissions from the plate making operation and printing lines with supporting calculations (lb/month and tons/year).
9. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

10. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.
11. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

It should be noted that this permit has been revised to revise the emission limits in Condition 2a.

If you have any questions on this, please call George Kennedy at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

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cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the commercial printing source operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels, e.g., 100 tons/year for volatile organic material (VOM) and 10 tons/year for any single HAP and 25 tons/year for combination of HAPs at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled and control measures are more effective than required in this permit.

| <u>Process</u> | <u>VOM Emissions (Tons/Year)</u> | <u>PM Emissions (Tons/Year)</u> | <u>NO_x Emissions (Tons/Year)</u> | <u>CO Emissions (Tons/Year)</u> |
|---|--------------------------------------|-------------------------------------|---|-------------------------------------|
| Plate Making, 2 Flexographic Presses, Clean-Up | 21.10 | | | |
| 2 Laminators/Coaters | | 0.44 | | |
| Natural Gas | <u>0.11</u> | <u>0.15</u> | <u>2.00</u> | <u>1.68</u> |
| Total | 21.21 | 0.59 | 2.00 | 1.68 |

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PROJECT SUMMARY

I. INTRODUCTION

CTI Industries Corporation has voluntarily applied for a Federally Enforceable State Operating permit for its Barrington printing facility in order to voluntarily incorporate federally enforceable limits. These limits would prevent the facility from being a major source of emissions so that an operating permit does not have to be obtained under the Clean Air Act Permit Program. The proposed limits would be accompanied by recordkeeping and reporting requirements to assure that the facility is operated as a non-major source.

II. SOURCE DESCRIPTION

CTI Industries Corporation operates a printing facility that manufactures and prints on balloons, packaging film, and banners. They have two flexographic printing presses, a plate making operation, and two laminators/coaters. Raw materials nylon and polyethylene are bonded together with a water based adhesive on a laminator/extruder to create packaging film, balloon film, and banners. The two flexographic presses then print on the film and banner. Inks and cleaning solvents are used in normal printing operation conditions.

III. EMISSIONS

The principal air contaminant emitted from the printing operation is volatile organic material (VOM) which is generated during ink and clean up solvent handling/usage throughout the printing and cleaning processes. Emissions of VOM from the printing operation are vented to the atmosphere.

The principal air contaminant emitted from the plate making operation is volatile organic material (VOM) which is generated during the handling and usage of washout solvent. Emissions of VOM from the plate making operation are vented to the atmosphere.

The two laminators/coaters emit negligible emissions of particulate matter.

IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Boards emission standards. The Board's emission standards represent the basic requirements for sources in Illinois. Standards for VOM emissions from the flexographic printing presses are found in 35 Ill. Adm. Code Part 28, Subpart H "Printing and Publishing". This site readily complies with all applicable Board standards.

V. PROPOSED PERMIT

The conditions of the proposed permit contain limitations and requirements to assure that this facility will be operated as a non-major source. The permit sets limitations on usage of raw materials and operating conditions. These limitations are consistent with the historical operation and capacity of the facility.

The permit conditions also establish appropriate compliance procedures, including inspection practices, recordkeeping requirements, and reporting requirements. The Permittee must carry out these procedures on an on-going basis to demonstrate that the facility is operating within the limitations set by the permit and are properly controlling emissions.

VI. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that the facility meets all applicable state and federal air pollution control requirements, subject to the conditions proposed in the draft permit. The Illinois EPA is therefore proposing to issue a permit with federally enforceable limits for this operation.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 166.

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